
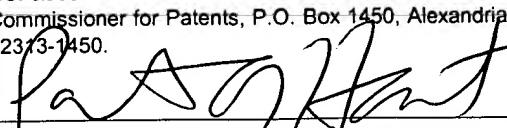


Image AF/2826

TRANSMITTAL OF APPEAL BRIEF (Large Entity)			Docket No. YKI-0040	
In Re Application Of: Koji Suzuki et al.				
Serial No. 09/532,283	Filing Date 03/23/2000	Examiner Leonardo Andujar	Group Art Unit 2826	
Invention: <b>ORGANIC ELECTROLUMINESCENCE DISPLAY WITH IMPROVED CONTACT CHARACTERISTICS</b>				
<p style="text-align: center;"><u>TO THE COMMISSIONER FOR PATENTS:</u></p> <p>Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on December 16, 2003</p> <p>The fee for filing this Appeal Brief is: \$330.00</p> <p><input checked="" type="checkbox"/> A check in the amount of the fee is enclosed.</p> <p><input type="checkbox"/> The Director has already been authorized to charge fees in this application to a Deposit Account.</p> <p><input checked="" type="checkbox"/> The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 06-1130</p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"><div style="width: 40%;"> _____ Signature</div><div style="width: 50%; text-align: right;"><p>Dated: February 13, 2004</p><div style="border: 1px solid black; padding: 5px; margin-top: 10px;"><p>I certify that this document and fee is being deposited on Feb. 13, 2004 with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.</p> _____ Signature of Person Mailing Correspondence</div><p style="text-align: center;">Patricia A. Hart</p><p style="text-align: center;">Typed or Printed Name of Person Mailing Correspondence</p></div></div> <div style="margin-top: 10px;">CC:</div>				



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPELLANT: KOJI SUZUKI ET AL. )  
SERIAL NO.: 09/532,283 ) Group Art Unit: 2826  
FILED: March 23, 2000 ) Before the Examiner:  
FOR: ORGANIC ELECTROLUMINESCENCE ) L. ANDUJAR  
DISPLAY WITH IMPROVED CONTACT )  
CHARACTERISTICS )

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**APPEAL BRIEF**

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1. THE REAL PARTY IN INTEREST

The real party in interest in this appeal is Sanyo Electric Co., Ltd. Ownership by Sanyo Electric Co., Ltd. is established by an assignment document recorded for this application on July 12, 2000 on Reel 010959 Frame 0858.

2. RELATED APPEALS AND INTERFERENCES

Appellant knows of no related patent applications or patents under any appeal or interference proceeding.

3. STATUS OF CLAIMS

Currently, claims 1-19 and 23-26 are pending. All pending claims stand rejected under 35 U.S.C. § 103(a).

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4. STATUS OF AMENDMENTS

There have been no amendments filed subsequent to receipt of the final office action.

5. SUMMARY OF INVENTION

Referring to Figures 3, 4A, and 4B of the application, the invention relates to an organic electroluminescence display device that has organic electroluminescence elements and thin film transistors acting as switching elements.

In particular, the organic electroluminescence display device has a plurality of display pixel. Referring to Figure 3, the area surrounded by gate signal lines 51 and drain signal lines 52 defines a display pixel. Each display pixel has thin film transistors 30 and 40. Thin film transistor 30 is a switching thin film transistor and thin film transistor 40 is a driving thin film transistor for an organic electroluminescence element 60.

The organic electroluminescence display is fabricated by forming, in order, thin film transistors and organic electroluminescence elements on glass or resin substrate 10 or a conductor or on a semiconductor substrate 10. When the conductive or semiconductor substrate is used as the substrate 10, a gate insulating film 12 of SiO<sub>2</sub> or SiN is formed on the substrate. The thin film transistors 30 and 40, an inter-insulating film 15, a planarizing insulating film 17, and the organic electroluminescence display element 60 are formed over the insulating film. A contact hole is formed through planarizing insulating film 17 and inter-insulating film 15 so that the organic electroluminescence display element 60 can be contacted with the thin film transistors 30 and 40.

The organic electroluminescence element 60 has a laminated structure, which is formed by sequentially depositing an anode 61, an emissive element layer 62, and a cathode. In the organic electroluminescence element 60, holes injected from the anode and electrons

injected from the cathode are recombined inside the emissive layer. Thus, the recombination acts to excite the organic molecules included in the emissive layer to create excitons. The emissive layer 62 emanates light when the excitons lose radiant energy. The resultant light emanates to the outside via the anode 61 and a transparent insulating substrate 10.

Such an organic electroluminescence element requires a large current to operate. Thus, for the purpose of good displaying, the thin film transistor and the organic electroluminescence element must be in reliable electric contact. In order to provide a reliable contact, a refractory metal layer is provided which connects the thin film transistor to the organic electroluminescence element. The refractory metal layer provides a reliable contact between the thin film transistors and the organic electroluminescence element so that the display device can display respective pixels in a stable state and without any variation in brightness.

## 6. ISSUES

There is one issue on appeal: whether the Examiner's rejection of claims 1-19 and 23-28 under 35 U.S.C. § 103(a) as being unpatentable over Appellant's admitted prior art ("AAPA") in view of Yamauchi et al. (U.S. 5,640,067) ("Yamauchi") is improper.

## 7. GROUPING OF CLAIMS

There are three groups of claims. Claims 1-7, 23, and 24 comprise the first group, which stand or fall together, under the Examiner's contested rejection of these claims under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Yamauchi. Claims 8-12, 25, and 26 comprise the second group, which stand or fall together, under the Examiner's contested rejection of these claims under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Yamauchi. Claims 13-19 comprise the third group, which stand or fall together, under the Examiner's contested rejection of these claims under 35 U.S.C. § 103(a)

as being unpatentable over AAPA in view of Yamauchi.

8. ARGUMENT

A. **Claims 1-7, 20, 23, and 24 are patentable over AAPA in view of Yamauchi.**

Under the first grouping of claims, the Examiner improperly rejected claims 1-7, 23, and 24 under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Yamauchi as being anticipated by Iizuka. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; and that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

First, AAPA and Yamauchi do not teach or suggest all of the limitations of claims 1-7, 23, and 24.

Claims 1-7, 23, and 24 include the following limitation: “a refractory metal layer connecting a source region or drain region of said thin film transistor to said anode of said organic electroluminescence element, **said refractory metal layer, one of said source region and drain region, and said anode being laminated in a thickness direction of said substrate.**” (Emphasis supplied.) The Examiner agrees that the AAPA does not teach a refractory metal layer connecting a source region or a drain region of the thin film transistor to the anode of the organic electroluminescence element. Instead, the Examiner asserts that Yamauchi teaches that limitation.

Referring to Figure 1 of Yamauchi, the Examiner asserts that Yamauchi teaches refractory metal layers 111 and 112 connecting a thin film transistor drain region 107 to an anode 109 of the organic electroluminescence element. Yamauchi also teaches a substrate 101. The two refractory metals 111 and 112 are also connected by a conductive lead 114. When reviewing Figure 1 of Yamauchi, it becomes apparent that Yamauchi does not teach

the additional limitation that the refractory metal layer, one of the source region and drain region, and the anode are laminated in a thickness direction of the substrate. Yamauchi teaches that the anode of the electroluminescence element is located **next to** the drain region of the thin film transistor and that both elements are located directly on the substrate. In other words, the thin film transistor and the electroluminescence element are formed in parallel. As such, it is impossible for Yamauchi to teach that the refractory metal layer, the drain region of the thin film transistor, and the anode are laminated in a thickness direction the substrate. Because of the location of the anode in Yamauchi, Yamauchi cannot teach the claimed limitations.

Moreover, in Yamauchi, because the thin film transistor is formed parallel to the electroluminescence element, the region where the thin film transistor is formed does not emit light from the electroluminescence element. No matter how the light emitted from the electroluminescence element propagates, whether upward or downward, the light from the electroluminescence element is not emitted at the thin film transistor formation region. Thus, the aperture ratio, which is the ratio between the luminous region and the pixel region, will be small.

In contrast, by forming a structure such that the source region or the drain region of the thin film transistor and the anode are laminated in the thickness direction of the substrate and connected via a refractory metal, if the light emitted from the electroluminescence element is discharged upward, the anode can be extended to the thin film transistor formation region in order to discharge the light emitted from the electroluminescence element. The aperture ratio can thus be increased. When the light emitted from the electroluminescence element is discharged downward, by extending the anode also to the thin film transistor formation region, the aperture ratio can be improved due to the fact that light is discharged at gaps between structures such as the gate electrode and active layer which form the thin film transistor.

In response to Appellant's arguments, the Examiner seems to suggest that the test for obviousness does not require that he show that all of the references expressly teach and suggest the claimed limitations. Instead, the Examiner responds that Yamauchi shows that

the refractory metal layers are formed at the ends of the drain electrode to connect the anode and thus, Yamauchi teaching suggests that the refractive layers have to be formed at the analogous contact locations of AAPA's prior art electrode in order to prevent the electrode of being contaminated with silicon. The Examiner cites *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981) (holding that obviousness is tested by "what the combined teachings of the reference would have suggested to those of ordinary skill in the art") for support for this contention.

However, the Federal Circuit explained in *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988) what the *Keller* holding meant. The *Fine* court stated that obviousness "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." *Id.* at 1599. The court also explained "[t]o imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *Id.* at 1600. In this case, the Examiner has used hindsight and the Appellant's claimed invention to reject the claims.

In this case, AAPA and Yamauchi are different structures, which is exemplified by the fact that the anode in Yamauchi is formed directly on the substrate. None of the references teach or suggest "said refractory metal layer, one of said source region and drain region, and said anode being laminated in a thickness direction of said substrate," except the claimed invention. There is nothing in any of the references that teach or suggests all of Appellant's claimed limitations.

In addition, claims 1-7, 23, and 24 include the following limitation: **"a planarization insulating film covers said refractory metal layer, wherein said anode is formed on said planarization insulating film, a contact hole is formed through the planarization insulating film, and said anode partially extends to said contact hole and said anode is in contact with said refractory metal layer."** (Emphasis supplied.)

The Examiner acknowledges that AAPA "does not show that the planarization insulating film covers the refractory metal." Moreover, Yamauchi does not teach or suggest

a planarization insulating film. However, the Examiner concludes that “[s]ince the refractory metal layer is formed in the anode-transistor contact region, the refractory metal layer had to be covered by the planarization layer.” Again, the Examiner is using hindsight to reject the claims. As such, the Examiner is using Appellant’s own invention as a reference against the claims.

Neither AAPA nor Yamauchi teach or suggest a planarization insulating film that covers the refractory metal. While AAPA does teach a planarization insulating film, AAPA does not teach or suggest the use of a refractory metal layer. Thus, AAPA does not teach or suggest a planarization insulating film that covers a refractory metal layer. Moreover, Yamauchi does not teach or suggest a planarization insulating film and thus, does not teach or suggest a planarization insulating film that covers a refractory metal layer.

In the claimed invention, because the anode is formed on top of the planarization insulating film, the anode surface can be planarized. Because Yamauchi does not have a planarization insulating film, Yamauchi does not teach or suggest that the anode surface can be planarized. By planarizing the anode surface, voltage can be applied uniformly to the EL layer, and thus, unevenness in brightness can be prevented.

Second, it is not obvious to combine the planarization layer in AAPA with the refractory metal layer of Yamauchi to reach Appellant’s claimed limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); MPEP § 2143.01. There is no teaching in the cited art to combine the references in an attempt to produce the claimed invention.

Even though AAPA teaches a planarization layer and Yamauchi may teach a refractory metal layer, there is no teaching between the two references that the planarization insulating film **covers** the refractory metal layer as claimed by Appellant. In fact, Yamauchi actually teaches away from having the planarization layer cover the refractory metal layer because, in Yamauchi, the first refractory metal layer 111 and the second refractory metal

layer 112 are covered by the conductive lead 114.

There is nothing in either AAPA or Yamauchi that would teach or suggest locating the refractory metal layer as claimed by Appellant. The refractory metal layer serves as a contact between the source side of the p-Si film and anode in conjunction with serving as a wiring for providing a current from the power line to the drain side of the p-Si film. The refractory metal layer could have been located so as to not have the planarization layer cover the refractory metal; however, as Appellant discovered, by locating the refractory layer as claimed by Appellant the anode surface can be planarized, and thus, unevenness in brightness can be prevented.

Moreover, it does not make sense to combine the planarization insulating film with the structure of Yamauchi. In the structure of Yamauchi, the anode and the TFT are formed on the same surface, thereby having a completely different structure from the claimed invention. Yamauchi is insusceptible to adopting a concept that the contact hole is made on the planarization insulating film.

AAPA, Yamauchi, and the knowledge generally available in the art at the time of the invention do not contain the suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references to reach the claimed subject matter. The motivation for the limitation of having the planarization insulating film cover the refractory metal layer comes from Appellant's disclosure.

In addition, there is no motivation to combine AAPA and Yamauchi to reach the claimed limitation: "said anode partially extends to said contact hole and said anode is in contact with said refractory metal layer." The Examiner states that AAPA shows "a planarization insulating film 17, an anode formed on said planarization insulating film, a contact hole formed through the planarization film. Also, the anode partially extends the contact hole." However, the limitation also requires that "said anode partially extends to said contact hole and said anode is in contact with said refractory metal layer." It is only Appellant's disclosure that teaches that claimed limitation.

As explained above, Appellant maintains that the Examiner has used an improper standard in arriving at the rejection of the above claims because the Examiner has rejected

the claims by using Appellant's disclosure. In applying 35 U.S.C. § 103(a), the U.S. Court of Appeals for the Federal Circuit has consistently held that one must consider both the invention and the prior art "as a whole," not from improper hindsight gained from consideration of the claimed invention. *See Interconnect Planning Corp. v. Feil*, 227 U.S.P.Q. 543, 551 (Fed. Cir. 1985) and cases cited therein. According to the *Interconnect* court

"[n]ot only must the claimed invention as a whole be evaluated, but so also must the references as a whole, so that their teachings are applied in the context of their significance to a technician at the time - a technician without our knowledge of the solution." *Id.*

Appellant submits that when AAPA and Yamauchi are applied in context, a person skilled in the art would not arrive at Appellant's claimed limitations.

For at least the foregoing reasons, AAPA and Yamauchi fail to teach all the limitations as recited in claims 1-7, 23, and 24. Accordingly, Appellant respectfully submits that the rejection of claims 1-7, 23, and 24 under 35 U.S.C. § 103(a) is improper.

**B. Claims 8-12, 25, and 26 are patentable over AAPA in view of Yamauchi.**

Under the second grouping of claims, the Examiner improperly rejected claims 8-12, 25, and 26 under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Yamauchi as being anticipated by Iizuka. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; and that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

Claims 8-12, 25, and 26 include the following limitation: "a contact between one of a source and drain in said active layer and said anode of said organic electroluminescence element, and between the other of said source and drain in said active layer and said power source line, said contact being achieved through a refractory metal layer, said refractory metal

layer, one of said source and drain, and said anode being laminated in a thickness direction of said organic electroluminescence device.” This limitation is similar (but not identical) to the limitation in claims 1-7, 23, and 24. Instead, the limitations in claims 8-12, 25, and 26 require a contact between one of a source and drain in the active layer and the anode of the organic electroluminescence element. In addition, this limitation also requires that the contact is achieved through a refractory metal layer, and that the refractory metal layer, one of the source and drain, and the anode are laminated in a thickness direction of the organic electroluminescence device.

Because the limitations are similar, the same arguments that are set forth above also apply to the limitations in claims 8-12, 25, and 26. Appellant respectfully incorporates all of those arguments for claims 8-12, 25, and 26.

In addition, claims 8-12, 25, and 26 include the following limitation: “**a planarization insulating film covers said refractory metal layer**, wherein said anode is formed on said planarization insulating film, a contact hole is formed through the planarization insulating film, and **said anode partially extends to said contact hole and said anode is in contact with said refractory metal layer.**” (Emphasis supplied.) This limitation is identical to the limitation set forth above for claims 1-7, 23, and 24. Accordingly, Appellant respectfully incorporates all of the arguments that are set forth above with respect to claims 1-7, 23, and 24 to apply for these limitations in claims 8-12, 25, and 26.

For at least the foregoing reasons, AAPA and Yamauchi fail to teach all the limitations as recited in claims 8-12, 25, and 26. Accordingly, Appellant respectfully submits that the rejection of claims 8-12, 25, and 26 under 35 U.S.C. § 103(a) is improper.

**C. Claims 13-19 are patentable over AAPA in view of Yamauchi.**

Under the third grouping of claims, the Examiner improperly rejected claims 13-19 under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Yamauchi as being anticipated by Iizuka. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; and that

the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Claims 13-19 include the following limitation: “a refractory metal layer connecting a first electrode region in said active layer to said first electrode of said emissive element, said refractory metal layer, said first electrode region and said first electrode being laminated in a thickness direction of said light emitting device.” This limitation is similar (but not identical) to the limitation in claims 1-7, 23, and 24. Because the limitations are similar, the same arguments that are set forth above also apply to the limitations in claims 13-19. Appellant respectfully incorporates all of those arguments for claims 13-19.

In addition, claims 13-19 include the following limitation: **“a planarization insulating film covers said refractory metal layer; an anode is formed on said planarization insulating film; and a contact hole is formed through the planarization insulating film, wherein said anode partially extends to said contact hole and said anode is in contact with said refractory metal layer.”** This limitation is nearly the same as the the limitation set forth above for claims 1-7, 23, and 24. Accordingly, Appellant respectfully incorporates all of the arguments that are set forth above with respect to claims 1-7, 23, and 24 to apply for these limitations in claims 13-19.

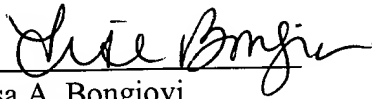
For at least the foregoing reasons, AAPA and Yamauchi fail to teach all the limitations as recited in claims 13-19. Accordingly, Appellant respectfully submits that the rejection of claims 13-19 under 35 U.S.C. § 103(a) is improper.

**D. Conclusion**

For the reasons cited above, Appellant respectfully submits that the rejections are improper and request reversal of the outstanding rejections. If there are any additional charges with respect to this Appeal, or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Appellant's attorneys.

Respectfully submitted,

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9. APPENDIX A

*Appealed Claims*

1. An organic electroluminescence device comprising:  
an organic electroluminescence element and a thin film transistor which are formed on a substrate; said organic electroluminescence element having at least an organic emissive layer disposed between an anode and a cathode; said thin film transistor controlling a current flowing to said organic electroluminescence element; said thin film transistor having an active layer made of a semiconductor material;  
a refractory metal layer connecting a source region or drain region of said thin film transistor to said anode of said organic electroluminescence element, said refractory metal layer, one of said source region and drain region, and said anode being laminated in a thickness direction of said substrate; and  
a planarization insulating film covers said refractory metal layer,  
wherein said anode is formed on said planarization insulating film, a contact hole is formed through the planarization insulating film, and said anode partially extends to said contact hole and said anode is in contact with said refractory metal layer.
2. The device defined in Claim 1, wherein said refractory metal layer is in direct contact with said active layer made of said semiconductor material.
3. The device defined in Claim 1, wherein said refractory metal layer comprises:  
a first refractory metal layer which is in direct contact with said active layer made of said semiconductor material; and  
a second refractory metal layer which is in direct contact with said anode of said organic electroluminescence element.
4. The device defined in Claim 1, wherein said refractory metal layer comprises:  
a first refractory metal layer which is in direct contact with said active layer made of said semiconductor material;  
a second refractory metal layer which is in direct contact with said anode of said organic electroluminescence element; and

a conductive metal layer disposed between said first refractory metal layer and said second refractory metal layer.

5. The device defined in Claim 4, wherein said active layer comprises polycrystalline silicon; and wherein said conductive metal layer comprises aluminum; and wherein said anode of said organic electroluminescence element comprises a transparent conductive material.

6. The device defined in Claim 4, wherein said first refractory metal layer contains either at least one of chromium, molybdenum, tungsten, and titanium, or an alloy including at least one of them; and wherein said conductive metal layer comprises aluminum.

7. The device defined in Claim 6, wherein said active layer comprises a silicon semiconductor; and wherein said anode of said organic electroluminescence element comprises indium tin oxide or indium zinc oxide.

8. An organic electroluminescence device comprising:

pixels, each of said pixels including an organic electroluminescence element and a thin film transistor, said organic electroluminescence element having an emissive layer disposed between an anode and a cathode, said thin film transistor controlling a current flowing from a power source line to said organic electroluminescence element, said thin film transistor having an active layer made of a semiconductor material;

a contact between one of a source and drain in said active layer and said anode of said organic electroluminescence element, and between the other of said source and drain in said active layer and said power source line, said contact being achieved through a refractory metal layer, said refractory metal layer, one of said source and drain, and said anode being laminated in a thickness direction of said organic electroluminescence device; and

a planarization insulating film covers said refractory metal layer,

wherein said anode is formed on said planarization insulating film, a contact hole is formed through the planarization insulating film, and said anode partially extends to said contact hole and said anode is in contact with said refractory metal layer.

9. The display device defined in Claim 8, wherein said refractory metal layer is in direct contact with said active layer made of said semiconductor material.

10. The display device defined in Claim 8, wherein said refractory metal layer disposed between one of the source and drain of said active layer and said anode of said organic electroluminescence element, comprises:

a first refractory metal layer being in direct contact with said active layer of said semiconductor material;

a second refractory metal layer being in direct contact with said anode of said organic electroluminescence element; and

a conductive metal layer disposed between said first refractory metal layer and said second refractory metal layer.

11. The display device defined in Claim 10, wherein said active layer comprises polycrystalline silicon; and wherein said conductive metal layer comprises aluminum; and wherein said anode of said organic electroluminescence element comprises a transparent conductive material.

12. The display device defined in Claim 8, wherein each pixel has a switching thin film transistor, said switching thin film transistor having a gate connected to a gate line, one of a source and drain in said active layer made of a semiconductor material and connected to a data line, and the other of said source and drain connected to a gate of a thin film transistor to control a flow of current supplied from a power source line to said organic electroluminescence element; said active layer of said switching thin film transistor making contact with said data line via a refractory metal layer.

13. A light emitting device comprising:

an emissive element having an emissive layer between a first electrode and a second electrode;

a thin film transistor for controlling power supplied to said emissive element, said thin film transistor having an active layer made of a semiconductor material;

a refractory metal layer connecting a first electrode region in said active layer to said first electrode of said emissive element, said refractory metal layer, said first electrode region and said first electrode being laminated in a thickness direction of said light emitting

device;

a planarization insulating film covers said refractory metal layer;

an anode is formed on said planarization insulating film; and

a contact hole is formed through the planarization insulating film,

wherein said anode partially extends to said contact hole and said anode is in contact with said refractory metal layer.

14. The light emitting device defined in Claim 13, wherein said refractory metal layer is in direct contact with said active layer made of said semiconductor material.

15. The light emitting device defined in Claim 13, wherein said refractory metal layer comprises:

a first refractory metal layer which is in direct contact with said active layer made of said semiconductor material; and

a second refractory metal layer which is in direct contact with a first electrode of said emissive element.

16. The light emitting device defined in Claim 13, wherein said refractory metal layer comprises:

a first refractory metal layer which is in direct contact with said active layer made of said semiconductor material;

a second refractory metal layer which is in direct contact with said first electrode of said emissive element; and

a conductive metal layer disposed between said first refractory metal layer and said second refractory metal layer.

17. The light emitting device defined in Claim 16, wherein said active layer comprises polycrystalline silicon; and wherein said conductive metal layer comprises aluminum; and wherein said anode of said organic electroluminescence element comprises a transparent conductive material.

18. The light emitting device defined in Claim 16, wherein said first refractory metal layer contains either at least one of chromium, molybdenum, tungsten, and titanium, or an alloy including at least one of them; and wherein said conductive metal layer comprises aluminum.

19. The light emitting device defined in Claim 18, wherein said active layer comprises a silicon semiconductor; and wherein said anode of said organic electroluminescence element comprises indium tin oxide or indium zinc oxide.

23. The device defined in Claim 1, wherein said refractory metal layer of said source region is substantially identical in shape to said refractory metal layer of said drain region.

24. The device defined in Claim 4, wherein said conductive metal layer of said source region is substantially identical in shape to said conductive metal layer of said drain region.

25. The device defined in Claim 8, wherein said refractory metal layer of said source region is substantially identical in shape to said refractory metal layer of said drain region.

26. The device defined in Claim 10, wherein said conductive metal layer of said source region is substantially identical in shape to said conductive metal layer of said drain region.